

Operation manual

Surgical motor

OrthoVET

CE



Read the operation manual before starting the device!
Pay attention to the safety instructions!

Surgical motor OrthoVET

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Surgery motor OrthoVET

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Surgical motor OrthoVET

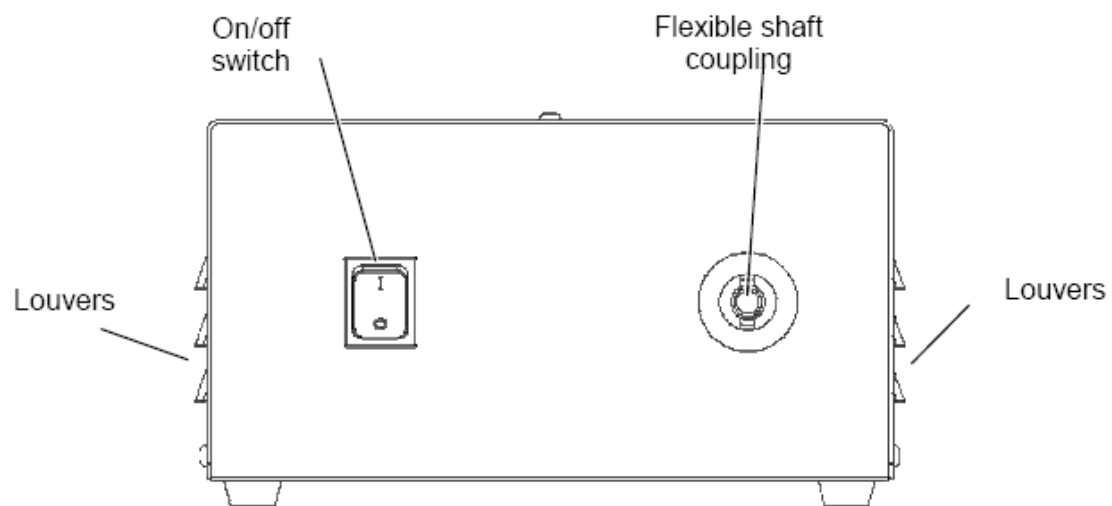


Figure 1: Front view

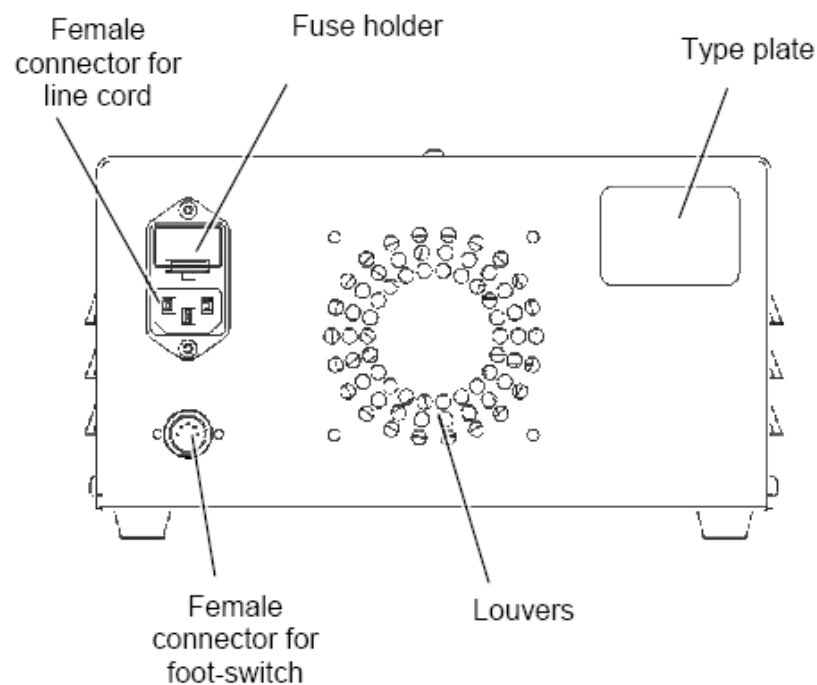


Figure 2: Back view

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Surgical motor OrthoVET

1 User instructions

Intended usage:

The OrthoVET is a surgical motor to drive various surgical hand-pieces in veterinary surgeries.

Non-intended usage:

The operation of the surgical motor in human surgeries or human medicine is not allowed. The surgical motor can not be sterilized.

Technical terms are explained in the glossary.

This operation manual contains the following abbreviations:

UVV = Unfallverhütungsvorschriften

(Accident prevention regulations)

IEC = International electrotechnical commission

EN = European Norm

VDE = Verband Deutscher Elektrotechniker
(Association of german electrical engineering technicians)

Symbols

CE = CE-mark



= This symbol flags all instructions that are relevant for a safe operation of the surgical motor. These instructions have to be followed. If not, injuries could be the consequence!

This operation manual refers to:

1. Half-skilled and introduced users
Persons, that have not been introduced may not use the surgical motor.
The chapters 1 – 9 are especially for the users.

2. Maintenance and repair specialists
The chapters 8, 9 and 13 are especially relevant for maintenance and repair specialists. Nevertheless these persons must have read and understood the complete operation manual.

3. Operators
The chapters 10 – 16 are intended for the operator.

Surgical motor OrthoVET

2 Safety instructions



Danger!

This sign indicates danger for humans.

Dangers to life are especially marked with the notice „Danger to life”.



Danger!

This sign indicates special dangers because of electricity.

Dangers to life are especially marked with the notice „Danger to life”.



Danger to life by electric shock!

Pull out the power plug before performing any maintenance procedures and especially before opening the chassis of the surgical motor!



Attention!

Damage of the surgical motor due to overheating!

The air stream through the louvers must not be limited at any time of operation.

Surgical motor OrthoVET

3 Short manual

This short manual is only a reminder.

You must have read and understood the complete manual and the safety instructions before operating the surgical motor!

Switch-on the device	Press the green on/off switch on 1 -> Switch illuminated
----------------------	---

Switch-off the device	Press the green on/off switch on 0 -> Switch dimmed
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Driving surgical hand-pieces	Press foot switch
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Pull out the power plug before performing any maintenance procedures and especially before opening the chassis of the surgical motor!

Surgical motor OrthoVET

4 Prominent features

The OrthoVET is a surgical motor to drive various surgical hand-pieces in veterinary surgeries.

Prominent features of the OrthoVET:

- easy to operate
- compact construction
- high performance
- robust and stainless metal chassis
- brushless motor (DC)
- low maintenance
- low warming
- variable revolution speed, adjustable with foot switch
- max. speed: 17,500 rpm
- robust and lightweight foot switch

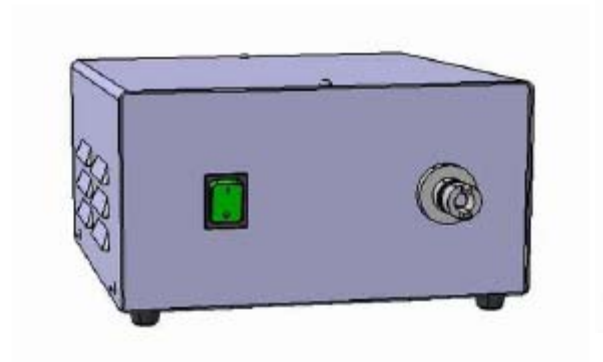


Figure 3: Surgical motor

Surgical motor OrthoVET

5 Device description

The OrthoVET is a surgical motor designed for utilization in veterinary surgeries that is operated by pressing the foot switch.

The principal constituents in the surgical motor are the brushless direct current motor with EMC filter and the motor speed control.

There is a ventilator inside the chassis on the back side.

6 Function

The surgical motor OrthoVET drives various surgical hand-pieces that are coupled via the flexible shaft. The motor speed is continuously adjustable up to a maximum speed of 17,500 rpm.

Surgical motor OrthoVET

7 Normal operation

7.1 Arranging the device

Connect to power supply

- Plug in the line cord to the female connector at the back side.
- Plug in the line cord to the power outlet.

Connect foot switch

- Plug in the foot switch cable to the female connector for the foot switch at the back side.
- Turn the ring nut to the right
- To disconnect the foot switch cable turn the ring nut to the left and pull out the plug.

Connect flexible shaft

- Push the flexible shaft connector onto the flexible shaft coupling until it is interlocked
- For disconnecting, pull back the sleeve on the flexible shaft's end and disconnect the flexible shaft.
- Also see the separate operation manual for the flexible shaft

Connect hand piece

- Also see the separate operation manual for the hand-piece



Figure 4: Connect foot switch



Figure 5: Surgical motor ready-to-operate

Surgical motor OrthoVET

Connection of flexible cable to the OrthoVet:

- The flexible cable is for the power transmission between the engine and the handpiece.
- Connect the bigger end with the engine, to do this you must plug it in till it locks. For unplug you must pull away from the pin so you can unplug it.
- The other end of the flexible cable is connecting the handpiece. For unplug you must pull the small button at the flexible cable.
- Before you can use the device attend to the constable noises of the unit. If there are some remarkable noises dont use the flexible cable.
- When you use the flexible cable attend to a steched cable. Don't flexure or snap off the flexible cable when you use it!
- The flexible shafts can be cleaned and disinfected with all commerical cleaning agents and disinfectants wich are suitable for cleaning rubber and plastic products and are nationally approved. Follow the manufacturer's instructions on dilution ratios, duration of action, etc. The flexible shafts are cleaned with a cloth moistended with disinfectant or with a soft brush.
- The connections on the end of the flexible cable whitch is connected to the drill handpiece should be lubricated at least once a week. Suited for this task is the oil Sterilit.
- The flexible cable should be cleaned and lubricated inside aproximatley once a year. The frequency of maintenance depends on the number of times the flexible cables are sterilized within a given period of time. This maintenance work should be performed only by authorized specialists. For this work you can contact us.



Surgical motor OrthoVET

Error detection and measures to correct them:

Engine does not work → Look at the chapter engine.

Flexible cable runs rough, knocks → Corrective maintenance at manufactures → maybe stretch the flexible cable to correct the noise

Handpiece does not work → Driving slot of drive shaft is broken

7.2 Switching on the device

- Press the green on/off-switch on 1
→ On/off-switch illuminated

7.3 Intended use

- Press the foot switch
The surgical motor runs with constant revolutions per minute

7.4 Switching off the device

- Press the green on/off-switch on 1
→ On/off-switch dark

Surgical motor OrthoVET

8 Maintenance

The chapter *Maintenance* is only for persons that have been introduced into the necessary maintenance procedures by the manufacturer or the operator of the device and that have proven their skills in a test.

The surgical motor stands-out for low maintenance.



Danger to life by electric shock!

Pull out the power plug before performing any maintenance procedures and especially before opening the chassis of the surgical motor!

8.1 Replacing fuses

Hint:
Always change both fuses at one time.
Obligatory fuses:
2 pieces IEC127 – M 2,5A 250V
Switching ability L (40 A)

- Disconnect line cord before changing any fuses!
- Release the detent on the fuse holder with a small screw driver.
- Pull out fuse holder.
- After replacing the fuse insert the fuse holder until it hearable snaps in.

Female connector for line cord

Fuse holder

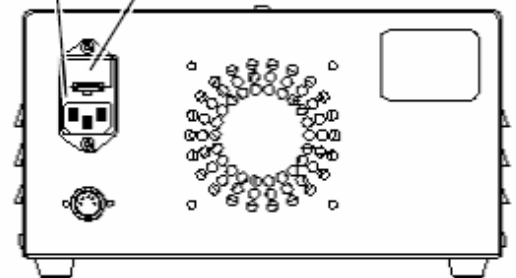


Figure 6: Back view

Surgical motor OrthoVET

9 Trouble shooting

Fault	Reason	Recognition	Solution
Motor is not running	No voltage	Line cord not plugged in	Plug in line cord
		On/off-switch stands on 0	Switch on/off-switch on 1
		Line cord defect	Use a new line cord
	Blown fuse	Defect fuse	Replace fuse
	Blown fuse straight after fuse replacement	Device defect	Repair by the manufacturer
	Motor defect	Motor blockage	Repair by the manufacturer
	Motor over-heated	Chassis extremely warm	Cool down motor
	No connection from the device to the foot switch	Foot switch cable not connected	Connect foot switch cable correctly (see chapter "Arranging the device")
		Foot switch cable defect	Replace foot switch
	Foot switch defect	Foot switch plug defect	Repair by the manufacturer
		Broken wire	Repair by the manufacturer
Surgical motor fails on stress	Blown fuse	Wrong fuses inserted	Check and replace fuses if necessary
Motor (rpm) can not be regulated any more	Foot switch defect	Surgical motor can not be regulated with another foot switch	Repair by the manufacturer
	Surgical motor defect	Surgical motor can not be regulated with another foot switch	Repair by the manufacturer
On/off switch not illuminated and On/off switch on 1 and motor runs	On/off switch defect	On/off switch not illuminated	Repair by the manufacturer
Hand piece defect	See separate operation manual for hand-piece		
Flexible shaft function disturbed	See separate operation manual for flexible shaft		

If the surgical motor is not working correctly after checking these points it has to be sent to the manufacturer for service.

Surgical motor OrthoVET

10 Technical data

Surgical motor	OrthoVET
Electric power consumption	400 W
Operating voltage	230 V~
Frequency	50 Hz
Power socket	Wall socket SCHUKO-type
Mains fuse	16 A
Cable cross section	3 x 1,5 mm ²
Protection class according to EN 60730	I
Dimensions Width x Depth x Height	ca. 250 x 280 x 140 mm
Weight	ca. 6,8 kg
Permitted ambient air temperature on operation	5 bis 40 °C
Sound level	ca. 65 dB(A)

Technical changes reserved.

Surgical motor OrthoVET

11 Spare parts

Only use original MBEngineering spare parts!

Art.-No.	Description
000774	Foot switch with cable
000775	Line cord with plug
000776	G-fuse M 2,5A 250V, Switching ability L

12 Terms for the operator / operating company

The personnel for operation, maintenance and installation needs to have the respective qualifications. Fields of responsibilities and supervision of the personnel must be well ordered by the operator/operating company. If the personnel do not have the necessary qualifications, they have to be skilled and instructed. Furthermore the operator has to make sure that the content of the operation manual is completely understood by the personnel.

The operator has to check his individual situation and has to assure the compliance of the prevailing regulations.

13 Transport, mounting, dismounting

Transport, mounting and dismounting may only be carried out by authorized qualified personnel.

13.1 Mounting the device

On mounting the device and on operation

- the national installation and operation regulations
 - the national explosion prevention regulations
 - the general rules for safety and accident prevention required by law
- have to be followed.

Surgical motor OrthoVET

The device may only be operated in rooms with dry air and a good air circulation and must be arranged on a stable underground. A good air circulation in the room is very important to lead away the heat generated by the surgical motor.

The device must be arranged horizontally for an undisturbed operation.



Attention!

Damage of the surgical motor due to overheating!

The air stream through the louvers must not be limited at any time of operation.

13.2 Electric connection

Connection to the power supply may only be made through an approved alternating current socket (SCHUKO-type) that is secured with a 16 A delayed-action fuse.

The device is grounded according to VDE 0730.

The power supply voltage at the place of operation must be identical with the voltage written on the type plate.

14 Warranty

The period of the warranty given by the manufacturer is 12 months, excluding any spare and wearing parts. The period of the warranty starts on the delivery date stated on the commercial documents. Any warranty issues have to be proved by the operator with the commercial documents

Any damages or malfunctions caused by wear and tear, overstress or inappropriate handling, are excluded from the manufacturers' warranty.

Surgical motor OrthoVET

15 Declaration of conformity

According to EC-guideline 98/37/EG

We declare, that the device described below

Type:	Chirurgiemotor
Model:	OrthoVET

In the delivered version complies with the following regulations:

98/37/EG	Guideline machines
92/31/EWG	Electromagnetic tolerance
93/68/EWG	Low voltage directive

The following harmonized standards have been applied:

DIN EN 292,	Safety of machines – Fundamental terms, general engineering guidelines Part1/Part2
DIN EN 418	Safety of machines – Emergency –stop button
DIN EN 1050	Safety of machines – Principles for assessment of risks
DIN EN 60204	Safety of the electric dangers from machines
DIN EN 60335	Safety of the electric devices for domestic use and similar purposes

The following national standards have been applied:

DIN 45635 Part 1 Acoustic power measurements

This EC-declaration of conformity becomes invalid as soon as any modifications on the device are carried out without the written consent of the manufacturer.

Tuttlingen 03.12.2004

Alexander Sprung – Bussines manager

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16 Glossary

Operator

The operator is the person or institution that uses the device according to its intended use in the economic sense.

Operating instruction

An operating instruction is an internal instruction of the employer to the employee. The regulations for the prevention of industrial accidents oblige employers to give these instructions to their employees.

An operating instruction shall help to minimize risks and the number of accidents. It contains the description of workflows, documented procedures and safety rules within the working process.



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CE-mark according to guideline 98/37/EG